

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/648,014

Confirmation No. 3470

Applicant: David Dennis Latham

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Examiner: Donald W. Underwood

Docket (atty ref.) No.: 16210-US

Title: Linkage Support System for a Work Vehicle

Moline, IL 61265

20 October 2008

Commissioner for Patents

P. O. Box 1450

Alexandria VA 22313-1450

APPEAL BRIEF

Mail Stop Appeal Brief-Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

This Appeal Brief is filed in connection with the present application within four months from the date of filing the Notice of Appeal. The Director is hereby authorized to charge Deposit Account No. 04-0525 for payment of the fee for this Appeal Brief. It is respectfully requested that, if necessary to effect a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response and shortages in other fees be charged, or any overpayment in fees be credited, to Deposit Account No. 04-0525.

REAL PARTY IN INTEREST

The real party in interest is Deere & Company pursuant to an assignment

recorded at the United States Patent & Trademark Office on reel 014443 at frame 0757.

#### RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences.

#### STATUS OF CLAIMS

Claims 1-7, 9-13, 15, 16 and 18-21 have been rejected and are being appealed.

#### STATUS OF AMENDMENTS

No amendment has been filed subsequent to the latest final rejection.

#### SUMMARY OF CLAIMED SUBJECT MATTER

##### Independent Claim 1 Summary

In reference to pages 3-5, paragraphs 7-13, a linkage support system for a work vehicle is provided. The work vehicle (Figs. 1, 2, and 5) includes a frame (20), a work tool (70), and a linkage (80) for manipulating the work tool. The frame has a left mast portion (21b) and a right mast portion (21a) (Fig. 4). The linkage support system comprises at least one fastener (130a, 130b) (Fig. 6); a load bearing support (120, 122) (Fig. 6), the load bearing support being a portion of the frame located between the left mast portion and the right mast portion; a linkage pin support (100) (Figs. 3-6); and an alternate linkage pin support (100') (Fig. 9), the load bearing support capable of being removably attached to the alternate linkage pin support, the linkage pin support coupled to the linkage, the alternate linkage pin support capable of being coupled to an alternate linkage (80') (Fig.8).

##### Independent Claim 9 Summary

In reference to pages 3-5, paragraphs 7-13, a linkage support system for a work vehicle is provided. The work vehicle (Figs. 1, 2, and 5) includes a frame (20), ground engaging means (22, 32) for supporting and propelling the frame over a surface (page 3, para. 7), a mast (21), the mast forming a portion of the frame and

extending upwardly from another portion of the frame, a boom (50) having a first boom end and a second boom end, the first boom end being pivotally coupled to the mast, a work tool (70) operatively coupled to the second boom end, and a linkage (80) for manipulating the work tool. The linkage support system comprises at least one fastener (130a, 130b) (Fig. 6); a load bearing support (120, 122) located on the mast (Fig. 6); a linkage pin support (100) (Figs. 3-6); and an alternate linkage pin support (100'). The linkage pin support is capable of being removably attached to the alternate linkage pin support, the linkage pin support being coupled to the linkage, the alternate linkage pin support capable of being coupled to an alternate linkage (80').

#### Independent Claim 16 Summary

In reference to pages 3-5, paragraphs 7-13, a work vehicle for performing a work operation is provided. The work vehicle (Figs. 1, 2, and 5) comprises a frame (20); ground engaging means (22, 32) for supporting and propelling the frame (page 3, para. 7); a mast (21) extending upwardly from the frame; a boom (50) having a first boom end and a second boom end, the first boom end pivotally coupled to the mast; a work tool (70) operatively coupled to the second boom end; a linkage (80) for manipulating the work tool, the linkage having a first linkage end and a second linkage end; an alternate linkage, the alternate linkage having a first alternate linkage end and a second alternate linkage end; at least one fastener (130a, 130b) (Fig. 6); a load bearing support (120, 122) located on the mast (Fig. 6); a linkage pin support (100) (Figs. 3-6); and an alternate linkage pin support (100'). The linkage pin support is removably attached to the load bearing support via the at least one fastener (Fig. 6). The load bearing support is capable of being removably attached to the alternate linkage pin support. The first linkage end is coupled to the linkage pin support (Figs. 5 and 6). The second linkage end is coupled to the work tool (Fig. 5). The second alternate linkage end is capable of being coupled to the alternate linkage pin support.

#### GROUND OF REJECTION TO BE REVIEWED

The specific grounds of rejection presented for review are (1) the rejection of

claims 1, 3, 8, 9, 14-17, 22, 23, 28, and 29 under 35 U.S.C. § 103(a) based on Apgar, U.S. Patent No. 6,168,368, or Abe, U.S. Patent No. 4,858,345, in view of Gilstrap, U.S. Patent No. 5,272,788; and (2) the rejection of claims 21, 27, and 33 under 35 U.S.C. § 103(a) based on Abe in view of Gilstrap and Mandon, U.S. Patent No. 5,746,861.

## ARGUMENT

### I. First Ground of Rejection - New Matter

New matter is material information that is added after the filing date of the application. To be material, information must be essential to patentability and non-existent in the original in either an explicit or implicit form. If it is inherent in the original application, it is not considered new matter. Thus the contention of the Office Action that the amendments to paragraphs [0010 and 0012] comprise new matter and/or are repetitive appears to be without foundation. Thus, in Applicant respectfully submits that the addition of material as it relates to the alternate linkage pin location and alternate linkage for optimal linkage performance as disclosed in original paragraphs [0003] and [0005] should not be considered as new matter. As such the information added to paragraphs [0010] and [0012] in the response to the Office Action of 16 July 2007 should be considered as inherent in the original application as it only provides details of features that were already disclosed.

### II. Legal Principles of Obviousness

The claims have been rejected under 35 U.S.C. § 103(a) for alleged obviousness based on various combinations of references. It is well settled that, to establish a case of obviousness under § 103, there must be some teaching, suggestion, or motivation for combining the references as proffered by the Office. In other words, the prior art must suggest the desirability of the combination. Without such motivation for combining the references, the obviousness rejection cannot stand. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002); *In re Semaker*, 702 F.2d 989, 994-95, 217 USPQ 1, 5-6 (Fed. Cir. 1983); M.P.E.P. §§ 2142-2143.

III. The Second Ground of Rejection

A. There is no motivation to modify Apgar or Abe or to combine Apgar or Abe in view of Gilstrap, Schwalenberg or Mandon.

A number of claims have been rejected under 35 U.S.C. § 103(a) for alleged obviousness based on Apgar or Abe.

Apgar discloses a front frame assembly 12 for a construction machine 10 such as an articulated wheel loader. A tilt tower arrangement 92 is secured to a second main support plate 86 at end portions 162 and 90 respectively thereof. There is no disclosure in Apgar that the tilt tower arrangement 92 is removable from the second main support plate 86 via a fastener much less any reason for providing for such removability.

Abe discloses a front frame 50 for an articulated wheel loader. The front frame 50 has a lower frame 20 and an upper frame 40. The upper frame 40 provides pivot points for boom cylinders, beams, and a bucket cylinder and is welded to the lower frame 20 at contact portions B and C. There is no disclosure in Abe that the upper frame 40 is removable from the lower frame 20 via a fastener much less any reason for providing for such removability.

The 15 July 2005 Office Action concedes that the support plate 86 and tilt tower arrangement 92 of Apgar are welded together but nonetheless argues that "it would have been obvious to construct these pieces to be bolted instead of welded since both methods are well known and used interchangeably." With respect to Abe, the Office Action makes a similar argument. Neither Apgar nor Abe disclose a benefit to removably attaching the linkage pin support and the load bearing support especially with respect to alternate linkage pin supports and alternate linkages.

It is the disclosure and claims of the present application, not Apgar or Abe, which explains and recites the desirability of removably attaching a linkage pin support to a load bearing support via at least one fastener. In particular, according to paragraph 5 of the present application, "The invention makes it possible to modify linkage pin locations on a work vehicle without incurring the associated time and cost difficulties of replacing the entire frame or vehicle as the removable linkage pin support may be replaced by another removable linkage pin support of a different

configuration." As stated, in paragraph 3, "... during the life cycle of the vehicle, there may be occasions when an alternate linkage pin location may be desired for optimal performance of the same or of a different linkage..."; for "conventional vehicles, such a change would require another frame or another vehicle either of which would significantly increase costs." Neither Apgar nor Abe suggested this advantage, or any other advantage, to be gained by modifying Apgar or Abe. Accordingly, one of ordinary skill in the art would not have been motivated to modify Apgar or Abe in the manner proffered in the 15 July 2005 Office Action. Such conclusive determinations by the Office Action appear to be motivated by impermissible hindsight. Further, none of the applied references (Gilstrap, Schwalenberg, Mandon or WO/47833) disclose the indicated features.

B. Claims 1-6, 9-13, 15, 16 and 18

Claim 1 is rejected under 35 U.S.C. § 103(a) based on Apgar or Abe. For at least the reasons discussed above in section III.A., there is no motivation for modifying Apgar or Abe so as to arrive at the linkage support system of claim 1. As such, Apgar or Abe fail to render obvious the linkage support system of claim 1 comprising a "linkage pin support removably attached to the load bearing support via the at least one fastener" or an alternate linkage/linkage pin support. Further, independent claims 9 and 16 recite features similar to those of claim 1. Thus, Apgar and Abe also fail to render these claims obvious.

Claims 1, 9 and 16 are also rejected under 35 U.S.C. § 103(a) based on Apgar or Abe in view of Gilstrap or Schwalenberg. For at least the reasons discussed above in section III.A., there is no motivation for modifying Apgar or Abe so as to arrive at the linkage support system of claim 1. Further, neither Gilstrap nor Schwalenberg disclose the indicated features. As such, neither Apgar nor Abe in view of either Gilstrap or Schwalenberg fail to render obvious the linkage support system of claim 1 comprising a "linkage pin support removably attached to the load bearing support via the at least one fastener" or an alternate linkage/linkage pin support or the similar features recited in independent claims 9 and 16.

As demonstrated above, none of the applied references appear to disclose the features of the indicated claims and, with the exception of hindsight, motivation to modify Apgar or Abe to arrive at the recited features of the rejected claims is absent.

The Board is thus urged to reverse the rejection of independent claims 1, 9 and 16 as well as claims 2 -6, 10-13, 15 and 18 depending therefrom.

C. Claims 7, 19, 20 and 21

Claims 7 and 19-21 are rejected under 35 U.S.C. § 103(a) based on Apgar or Abe in view of Mandon. For at least the reasons discussed above in section III.A., there is no motivation for modifying Gilstrap with either Apgar or Abe so as to arrive at the linkage support system of claim 1. Further, as the Office Action admits, Mandon merely discloses a lever 68 and does not suggest the indicated feature. As such, Apgar and Abe in view of Mandon fails to render obvious the linkage support system of claim 7, 19, 20 and 21 which depend from claims 1, 9 and 16.

Claims 7 and 19-21 are also rejected under 35 U.S.C. § 103(a) based on Apgar or Abe in view of Gilstrap or Schwalenberg and further in view of Mandon. For at least the reasons discussed above in section III.A., there is no motivation for modifying Gilstrap with either Apgar or Abe so as to arrive at the linkage support system of claim 1. Further, as the Office Action admits, Mandon merely discloses a lever 68 and does not suggest the indicated feature. Further, neither Gilstrap nor Schwalenberg remotely suggest these features. As such, Apgar and Abe in view of either Gilstrap or Schwalenberg and further in view of Mandon fails to render obvious the linkage support system of claim 7, 19, 20 and 21 which depend from claims 1, 9 and 16. The Board is thus urged to reverse the rejection of claims 7, 19, 20 and 21.

D. Claim 15

Claim 15 is rejected under 35 U.S.C. § 103(a) based on Apgar or Abe in view of WO/47833. For at least the reasons discussed above in section III.A., there is no motivation for modifying either Apgar or Abe so as to arrive at the linkage support system of claim 9. Further, WO/47833 does not disclose the indicated features. As such, Apgar or Abe in view of WO/47833 fails to render obvious the linkage support system of independent claim 9 or its dependent claim 15.

Claim 15 is rejected under 35 U.S.C. § 103(a) based on Apgar or Abe in view of Gilstrap or Schwalenberg. For at least the reasons discussed above in section III.A., there is no motivation for modifying either Apgar or Abe so as to arrive at the linkage support system of claim 9. Further, neither Gilstrap nor Schwalenberg

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disclose the indicated features. As such, Apgar or Abe in view of Gilstrap or Schwalenberg fails to render obvious the linkage support system of independent claim 9 or its dependent claim 15. The Board is urged to reverse the rejection of claim 15.

Respectfully,

/Hope W. Carter/

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Attorney for Applicant(s)

Hope W. Carter  
Reg. No. 46,604  
Patent Department  
Deere & Company  
One John Deere Place  
Moline, IL 61265  
Telephone No. (309) 765-4380



## CLAIMS APPENDIX

1. A linkage support system for a work vehicle, the work vehicle including a frame, a work tool, and a linkage for manipulating the work tool, the frame having a left mast portion and a right mast portion, the linkage support system comprising:
  - at least one fastener;
  - a load bearing support, the load bearing support being a portion of the frame located between the left mast portion and the right mast portion; and
  - a linkage pin support; and
  - an alternate linkage pin support, the linkage pin support removably attached to the load bearing support via the at least one fastener, the load bearing support capable of being removably attached to the alternate linkage pin support, the linkage pin support coupled to the linkage, the alternate linkage pin support capable of being coupled to an alternate linkage.
2. The linkage support system of claim 1, further comprising a reinforced area of the frame wherein the load bearing support is the reinforced area.
3. The linkage support system of claim 1, wherein the at least one fastener comprises a screw.
4. The linkage support system of claim 1, wherein the linkage pin support comprises an integrated linkage pin support.
5. The linkage support system of claim 4, wherein the integrated linkage pin support comprises at least two metal parts, the at least two metal parts being welded together.
6. The linkage support system of claim 4, wherein the integrated linkage pin support comprises a single metal casting.
7. The linkage support system of claim 1, further comprising a boom, the boom comprising:
  - a left boom portion having a first left boom end and a second left boom end;
  - a right boom portion having a first right boom end and a second right boom end; and
  - a cross tube, the first left boom end and the first right boom end respectively and pivotally connected to the left mast portion and the right mast portion, the second left boom end and the second right boom end pivotally connected to the work tool, the cross tube rigidly connecting the left boom portion and the right boom portion.
9. A linkage support system for a work vehicle, the work vehicle including a frame,

ground engaging means for supporting and propelling the frame over a surface, a mast, the mast forming a portion of the frame and extending upwardly from another portion of the frame, a boom having a first boom end and a second boom end, the first boom end being pivotally coupled to the mast, a work tool operatively coupled to the second boom end, and a linkage for manipulating the work tool, the linkage support system comprising:

at least one fastener;

a load bearing support located on the mast; and

a linkage pin support; and

an alternate linkage pin support, the linkage pin support being removably attached to the load bearing support via the at least one fastener, the load bearing support capable of being removably attached to the alternate linkage pin support, the linkage pin support being coupled to the linkage, the alternate linkage pin support capable of being coupled to an alternate linkage.

10. The linkage support system of claim 9, wherein the linkage includes a first linkage end and a second linkage end, the first linkage end being coupled to the linkage pin support, the second linkage end being coupled to the work tool.

11. The linkage support system of claim 9, wherein the linkage includes a power tilt device, the power tilt device being coupled to the linkage pin support, the power tilt device powering the linkage.

12. The linkage support system of claim 11, wherein the power tilt device comprises a hydraulic tilt cylinder.

13. The linkage support system of claim 9, wherein the frame comprises the load bearing support.

15. The linkage support system of claim 12, wherein the linkage pin support includes a hydraulics access hole for supplying hydraulics to the hydraulic tilt cylinder.

16. A work vehicle for performing a work operation, the work vehicle comprising:  
a frame;  
ground engaging means for supporting and propelling the frame;  
a mast extending upwardly from the frame;

a boom having a first boom end and a second boom end, the first boom end pivotally coupled to the mast;

a work tool operatively coupled to the second boom end;

a linkage for manipulating the work tool, the linkage having a first linkage end and a second linkage end;

an alternate linkage, the alternate linkage having a first alternate linkage end and a second alternate linkage end;

at least one fastener

a load bearing support located on the mast; and

a linkage pin support; and

an alternate linkage pin support, the linkage pin support removably attached to the load bearing support via the at least one fastener, the load bearing support capable of being removably attached to the alternate linkage pin support, the first linkage end being coupled to the linkage pin support, the second linkage end being coupled to the work tool, the second alternate linkage end capable of being coupled to the alternate linkage pin support.

18. The work vehicle of claim 16, wherein the linkage pin support is an integrated linkage pin support.

19. The work vehicle of claim 16, wherein the linkage comprises:

a power tilt device; and

a straight lever, the power tilt device having a first tilt device end and a second tilt device end, the first tilt device end being pivotally coupled to the linkage pin support, the second tilt device end being operatively coupled to the straight lever.

20. The work vehicle of claim 19, wherein the power tilt device comprises a hydraulic tilt cylinder.

21. The work vehicle of claim 20, wherein the linkage pin support includes a hydraulics access hole for supplying hydraulics to the hydraulic tilt cylinder.

#### EVIDENCE APPENDIX

No information is included in this appendix.

#### RELATED PROCEEDINGS APPENDIX

No information is included in this appendix.